

姓名：张余

性别：女

民族：汉族

职称：研究员

学历：博士

学位：博士

导师类别：博士生导师

邮箱地址：zhy@xao.ac.cn

现任职务：无



主要研究内容：

主要从事疏散星团、双星观测、演化星族合成等方面的研究，近年来主要开展了双星的观测、疏散星团结构以及时域观测的研究，具体工作包括：

(1) 利用 Gaia 数据对疏散星团的结构进行研究，分析星团的形态结构以及动力学演化情况。

(2) 利用南山 1 米望远镜对疏散星团进行长时间的测光监测，结合 LAMOST 以及 Gaia 数据对疏散星团进行成员星的分析，对疏散星团展开变星搜寻，并对其内部的特殊变星展开相关研究。

(3) 利用南山 1 米望远镜对食双星进行多波段的测光观测，结合光谱数据以及恒星演化模型得到双星的物理参数，同时分析双星的演化状态。

主持、参与科研项目：

1. 在研项目

1) 强磁场大质量恒星的结构与演化及相关天体的理论与实测研究，国家自然科学基金联合重点项目，2021—2014，参与

2) 中国科学院青年促进会人才项目，2018—2022，负责人

2. 已完成项目

1) 疏散星团变星搜寻及其时域观测研究，国家自然科学基金项目两岸项目，2017-2019，负责人

2) 演化星族合成模型的改进和应用，国家自然科学基金项目，2014-2016，负责人

3) 双星相互作用对高红移星系的影响，中科院西部之光博士项目，2012-2016，负责人

代表性科研成果（著作、论文、专利等）：

1. Zhang, Yu; Tang, Shih-Yun; Chen, W.P.; Pang, Xiaoying; Liu, Jinzhong, Diagnosing the Stellar Population and Tidal Structure of the Blanco 1 Star Cluster, ApJ, 2020, 889, 99

2. Zhang, Yu; Han, Quanwang; Liu, Jinzhong, The First Photometric Study of the Short-period Shallow Contact System LO Comae, *PASP*, 2016, 128, 124201
3. Zhang, Yu; Liu, Jinzhong; Zhang, Fenghui, The effect of binary interactions on parameter determinations for early-type galaxies, *MNRAS*, 2015, 449, 3301-3311
4. Zhang, Yu; Liu, Jinzhong; Zhang, Fenghui; Han, Zhanwen, The impact of binary stars on the colors of high-redshift galaxies, *A&A*, 2013, 554
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6. Zhang, Yu; Zhang, Fenghui; Han, Zhanwen; Liu, Jinzhong, The light-weighted age and metallicity of Galactic globular clusters, *Ap&SS*, 2010, 329, 255-260
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8. Liu Junhui, Esamdin Ali, Yu Zhang, Chin-Ping Hu, Tingting Chen, Junbo Zhang, Jinzhong Liu, Zixi Li, Juanjuan Ren, Jie Zheng, Hubiao Niu, Chunhai Bai, and Liang Ge, An Optical and X-Ray Study of the Contact Binary, BH Cassiopeiae, *PASP*, 2019, 131(1002):084202
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10. Liu, Jinzhong; Zhang, Yu; Song, Fangfang; Yang, Taozhi, The First Photometric Investigation of the Neglected Contact Binary LP Comae, *PASP*, 2017, 129, 4204
11. Song, Fangfang; Esamdin, Ali; Ma, Lu; Liu, Jinzhong; Zhang, Yu; Niu, Hubiao; Yang, Taozhi, A study of variable stars in the open cluster NGC 1582 and its surrounding field, *RAA*, 2016, 16, 10
12. Liu, Jinzhong; Zhang, Yu, Gravitational-wave radiation from double compact objects with eLISA in the Galaxy, *PASP*, 2014, 126, 211
13. Liu, Jinzhong; Zhang, Yu; Zhang, Hailong; Sun, Yutao; Wang, Na, Determining gravitational wave radiation from close galaxy pairs using a binary population synthesis approach, *A&A*, 2012, 540
14. Zhang, Fenghui; Li, Lifang; Zhang, Yu; Kang; Xiaoyu; Han, Zhanwen, Binary interactions on the calibrations of star formation rate, *MNRAS*, 2012, 421, 743
15. Kang XiaoYu; Zhang FengHui; Zhang Yu, Effects of binary interactions on the color evolution of M33. 2012, *ScChG*, 8, 1505
16. Liu, Cheng; Li, Lifang; Zhang, Fenghui; Zhang, Yu; Jiang, Dengkai; Liu, Jinzhong, White dwarf-main sequence binaries identified within SDSS DR7 and UKIDSS DR5, *MNRAS*, 2012, 424, 1841

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18. Liu, Jinzhong; Zhang, Yu; Han, Zhanwen; Zhang, Fenghui, Contribution of close double white dwarfs to the Galactic gravitational wave foreground. 2010, Ap&SS, 329, 297
19. Liu, Jinzhong; Han, Zhanwen; Zhang, Fenghui; Zhang, Yu, A comprehensive study of close double white dwarfs as gravitational wave sources: evolutionary channels, birth rates, and physical properties, ApJ, 2010, 719, 1546
20. Zhang, Fenghui; Han, Zhanwen; Li, Lifang; Shan, Hongguang; Zhang, Yu, The effects of ultraviolet photometry and binary interactions on photometric redshift and galaxy morphology, MNRAS, 2010, 408, 1283
21. Zhang, Fenghui; Han, Zhanwen; Li, Lifang; Guo, Jianpo; Zhang, Yu, Inclusion of sdBs in evolutionary population synthesis for binary stellar populations and the application: the determination of photo-z and galaxy morphology, Ap&SS, 2010, 329, 249